Bureau of Land Management
California Desert District
El Centro and Palm Springs-South Coast Field Offices

BLM RESPONSES TO PUBLIC COMMENTS
EA Number CA-660-01-50

Introduction

The EA for programmatic research activities on BLM-managed public lands was developed in coordination with the Peninsular Ranges Bighorn Sheep Recovery Team, consisting of bighorn sheep experts from various research institutions, and Federal and State agencies. The EA was released for a 30-day public review period on August 28, 2001. Copies were directly mailed to over 60 private entities and local agencies. Availability of the EA was announced via a News Release (dated August 28, 2001) and the EA was published on the BLM web site at www.ca.blm.gov. In addition, a Notice of Proposed Action (NOPA) in wilderness was released August 22, 2001 to the NOPA mailing list.

At the close of the public comment period on September 27, 2001, BLM received comment letters from 16 entities. BLM put together a team of interdisciplinary specialists (recreation, realty, wildlife, wilderness, planning and NEPA) to review the public comments and to prepare responses to the substantive comments. The comment letters and response to comments are provided below. Each comment letter was enumerated with a unique alphabetic letter, and each substantive comment within each comment letter was numbered sequentially. The responses are similarly numbered such that response number A.1. corresponds to comment letter A, comment number 1.

Response to Letter A

1. The Proposed Action is taken from research identified as critical to recovery in the Recovery Plan. Research proposals were reviewed by members of the Recovery Team prior to submission to the BLM for permit consideration. An interagency meeting was convened on August 1, 2001 at the Carlsbad Office of the Fish and Wildlife Service attended by BLM, USFWS, CDFG to discuss and review research proposals. An additional meeting was held on August 2, 2001 with research proponents and BLM. USFWS, CDFG to discuss proposed and future research. BLM prepared the EA and accepted thorough review by USFWS with comments and extensive input incorporated. Research proponents were consulted by telephone and their input and information was included in EA. The purpose of this environmental assessment is to evaluate the impacts of proposed research described in the Peninsular Ranges Bighorn Sheep Recovery Plan. Page 3 of the EA states that CDFG capture operations are in support of the research.

2. The number of sheep proposed to be captured on BLM land under the *Reduced Research on BLM Land Alternative* is proportional to the amount of BLM land within critical habitat. Roughly 28% of designated critical habitat is BLM managed lands. Fifteen bighorn sheep represents 15 to 18% of the total number proposed to be captured under the Proposed Action. The *Increased Research on BLM Land* was derived by considering the total estimated population, the number proposed to be captured. Increasing the number to be captured and marked would increase the accuracy, decrease the confidence intervals, and provide a more accurate population estimate.

3. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are incorporated into the amended EA under *Bighorn Sheep Mitigation Measures.* Additional mitigation measures were developed during the August 1-2, 2001 coordination meetings with the researchers and other agencies.

4. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are incorporated into the amended EA under *Bighorn Sheep Mitigation Measures.* Additional mitigation measures were developed during the August 1-2, 2001 coordination meetings with the researchers and other agencies.

5. Categorical exclusions are prohibited from being applied when adverse impacts to threatened or endangered species may occur.

Response to Letter B

1. Permits issued under this programmatic research EA and the voluntary trail use program are both interim actions pending completion of the CDCA Plan Amendment for the Coachella Valley Multiple Species Habitat Conservation Plan. At that time, BLM will conduct a broader analysis in an effort to balance the needs of a myriad of public land uses while achieving recovery of the bighorn sheep. BLM can not manage the public lands alone. We believe collaborative stewardship of the public lands is the best way to ensure an enduring public benefit by and for the public lands. Towards that end, BLM will seek ways in which all of our constituents may contribute to the recovery of the bighorn sheep while promoting reasonable use and enjoyment the public lands.

2. Research activities permitted under this interim programmatic EA must demonstrate to the satisfaction of the BLM authorized officer a public benefit by providing information which will result in better land management decisions and promote recovery of the Peninsular Ranges bighorn sheep. Impacts to bighorn sheep must be the minimum necessary to achieve the desired information. Research data to be collected includes an evaluation of bighorn sheep habitat

use and selection relative to the location of trails. BLM's long-term intent is to provide for an adequate level of research to gather much needed information in order to provide reasonable opportunities for trail use in the Santa Rosa and San Jacinto Mountains.

3. Augmentation and translocation is an important management tool with isolated populations. Augmentations and translocations are almost twice as likely to be successful when indigenous source stocks are used (Singer et al., 2000). The proposed augmentation program in the San Jacinto Mountains is designed to allow researchers and managers to assess the impact and efficacy of introducing wild-reared and captive reared bighorn sheep into a resident population. Because this population is isolated from other segments of the metapopulation, translocation and re-introduction may prove to be an important management tool in the future. The translocated sheep will all be fitted with GPS collars which will allow researchers to evaluate the efficacy and success of the translocation efforts.

4. Lamb captures would occur in the spring of 2002 and a maximum of 10 lambs would be captured. All of the ewes in the northern Santa Rosa Mountains are collared, thus making location of newborn lambs relatively easy. A helicopter may be used to take researchers and capture personnel to the area where lambs are but captures would occur on the ground using hand-held net guns or hand capture. There are several examples in the primary scientific, peer-reviewed literature which indicate that the ewe-lamb bond is not disrupted by capturing lambs (Hass 1989, 1991) or during spring ewe captures (L'Heureux et al., 1995).

5. Permits issued by the BLM will have stipulations attached which require the researchers to submit annual progress reports and a final project report upon completion of the project. Research proposals shall be reviewed by the Recovery Team and the agencies involved prior to submission to the BLM.

6. The proposed research will increase our knowledge and understanding of cause-specific mortality in bighorn lambs which will enable the BLM to make reasonable land management decisions affecting other uses.

7. The intent of issuing interim permits is to approve the research activities collectively and within the constraints of the approved action and mitigation measures. This would include all potential helicopter landings in wilderness. Individual landings would not need further approval under a permit, but prior notification of planned landings in wilderness would be required to improve BLM's effectiveness in communicating research activities to the public. A mitigation measure addressing this has been added to the EA.

8. It is incumbent upon the applicants to obtain landowner permission to conduct research on private lands. Issuance of a BLM permit does not authorize any activities other than those on BLM-managed public lands. A mitigation measure has been added to reiterate the importance of obtaining private landowner permission prior to conducting research activities on private land.

9. Mitigation Measure No. 5 (formerly No. 2) has been amended to reflect the intent of the BLM. Distance and observation parameters are dictated by the research objectives and by necessity must be tailored to specific situations.

10. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are incorporated as an attachment into the amended EA under *Bighorn Sheep Mitigation Measures.* Stipulation E states "*If an animal is not captured within the allotted 5 minute pursuit time, the capture of that animal will be abandoned".* The purpose of this stipulation is to reduce the risk of capture myopathy through overheating. Once an animal escapes capture, they usually "wise up" and hide themselves until the helicopters are gone.

11. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are incorporated by reference into the amended EA under *Bighorn Sheep Mitigation Measures.* Stipulation F states *"To minimize stress to sheep during processing, they will be blindfolded, hobbled, and retained in a sternal position".*

12. Veterinarians from the University of California, Davis and the California Department of Fish and Game will be present during processing and available during capture procedures. Capture reports will be prepared by the CDFG and provided to the BLM.

13. The EA was mailed to over 60 individuals and groups and was provided on the BLM internet site. The Monument Advisory Committee is not available at this time to provide comments on this interim proposal. Research activities will be re-evaluated through the CDCA Plan Amendment which will be made available for a 90-day public review period. The Monument Advisory Committee will have an opportunity to consider the role of research in the Santa Rosa and San Jacinto Mountains National Monument when the land and resource management plan for the monument is prepared. Specific mitigation measures have been added to ensure adequate public information is available as a result of research land uses on public lands.

Response to Letter C

1. A mitigation measure has been added to the EA requiring prior notification of planned landings in wilderness to improve BLM's effectiveness in communicating research activities in wilderness to the public.

Response to Letter D

1. Members of the public interested in participating in research projects are encouraged to coordinate directly with the researchers. Once a written research proposal has been prepared by the researcher which includes research objectives, methods (such as the use of volunteers), and management implications, the proposal shall be reviewed by the Recovery Team, USFWS, CDFG, and BLM. A research design regarding the possible effects of geochemical changes on forage and nutrition may well be appropriate. Such a proposal has not yet been developed.

Response to Letter E

1. The purpose of NEPA is to evaluate the impact of the proposal, including both potential adverse effects and public benefits of the research. BLM must make a determination as to the validity of the research proposal as a land use in so far as it provides a clear public benefit and it avoids significant adverse impacts. The scientific merit of the research proposal is more within the purview of peer review through scientific journal publication. The alternatives provide options beyond the proposed action. The Reduced Impact to Public Lands alternative would only restrict the number of sheep that may be captured on BLM-managed public lands. This does not restrict the total number of bighorn that may be captured but only the areas in which they may be captured.

2. Bighorn sheep that have been captured and fitted with radio or GPS collars are closely monitored over time. Radio telemetry has been used for decades to monitor bighorn sheep in the wild. During that time, much has been learned about the application of radio telemetry techniques. For example, Bleich et al., (1990) documented chronic injuries to the jaws and necks of bighorn rams because of poorly fitted radio telemetry collars and suggested that adverse effects on foraging behavior and decreased fitness. Recommendations on collar tightness (Bleich et al., 1990) has greatly reduced neck and jaw injuries to bighorn rams in recent years. Knowledge of capture myopathy and how to prevent it has reduced the occurrence of capture related mortality.

3. An interagency meeting was convened on August 1st , 2001 at the Carlsbad Office of the Fish and Wildlife Service attended by BLM, USFWS, CDFG to discuss the issues of jurisdiction and review. An additional meeting was held on

August 2nd, 2001 with research proponents and BLM. USFWS, CDFG to discuss proposed and future research. BLM prepared the EA and accepted thorough review by USFWS with comments and extensive input incorporated into the EA. Formal Section 7 Consultation was initiated on 27 August 2001 with USFWS. Input from the CDFG was considered and incorporated. Research proponents were consulted by telephone and their input and information was included in EA. Coordination with USFWS continues through the comment and review process and will be included in the Amended EA and Decision Record.

4. The Cumulative Impacts section of the EA has been revised to reflect comments received. Additional historical information is available in the Recovery Plan cited in the EA.

5. The Cumulative Impacts section of the EA has been revised to reflect comments received. Vehicular travel on Dunn Road actually increased between 2000 and 2001 due to administrative requirements under a lawsuit settlement. It is accurate that BLM and other jurisdictions continue to implement management measures to promote bighorn sheep recovery.

6. Sample size will likely remain the same whether sheep are collected on BLM land or non-BLM land; however it may affect the distribution reliability. Any ambiguity inferred in the impacts to the reduced alternative results from the best information available at this time and will be reviewed again through the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

7. On page 9 of the EA, item B2, "Issuance of a BLM permit does not authorize any activities other than those on BLM-managed public lands." On page 3, " To appropriately address cumulative impacts to bighorn sheep, the complete research program presented in the Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (2000, pp 95-104) is summarized below and is incorporated into this document by reference."

8. Public outreach and involvement is an important tool for land managers and endangered species management. Timing is a very important component in retrieving mortalities for necropsy and investigation. Trained wildlife investigators are used to assess the scene where a mortality occurs to determine the cause of mortality. Use of pack animals to retrieve dead sheep in lieu of helicopters may be considered by the Recovery Team. However, timeliness and the potential for disease transmission is a concern.

Response to Letter F

1. Permits issued under this programmatic EA would be interim pending completion of the CDCA Plan Amendment for the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). The CDCA Plan Amendment/ CVMSHCP will evaluate the impact of research and other uses on bighorn sheep. The comment period for the CDCA Plan Amendment/ CVMSHCP will be 90 days. The public review draft of that document is anticipated in early 2002. Research proposals were reviewed by members of the Recovery Team prior to submission to the BLM for permit consideration. An interagency meeting was convened on August 1st , 2001 at the Carlsbad Office of the Fish and Wildlife Service attended by BLM, USFWS, CDFG to discuss and review research proposals. An additional meeting was held on August 2nd, 2001 with research proponents and BLM. USFWS, CDFG to discuss proposed and future research. BLM prepared the EA and accepted thorough review by USFWS with comments and extensive input incorporated. Research proponents were consulted by telephone and their input and information was included in EA.

2. A mitigation measure (number 3) has been added to the Amended EA which requires permit holders to summit annual progress reports and a final project report. Annual progress reports and final project reports shall include information consistent with objectives of the research proposed. This information will aid the BLM in managing public lands consistent with recovery objectives and its multiple-use mandate.

3. The Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (USFWS 2000) describes specific research to support recovery of this population. The research described in the Recovery Plan is the basis for this programmatic EA. The Recovery Plan was published by the USFWS with the input of knowledgeable bighorn sheep experts and following USFWS procedures. The Recovery Plan was reviewed by technical and agency reviewers and comments were included and addressed in the final Recovery Plan. Research proposals were reviewed by members of the Recovery Team prior to submission to the BLM for permit consideration through the NEPA process. The purpose of NEPA is to evaluate the impact of the proposal, including both potential adverse effects and public benefits of the research. BLM must make a determination as to the validity of the research proposal as a land use in so far as it provides a clear public benefit and it avoids significant adverse impacts. The scientific merit of the research proposal is more within the purview of peer review through scientific journal publication.

4. The purpose of this EA is to evaluate the impacts of the proposed action. Comments received during the comment review period of the Recovery Plan will not be re-evaluated by BLM in this document. Until such time as the currently

approved Recovery Plan is revised, BLM must use the Recovery Plan provided by the USFWS as a tool to promote recovery of the bighorn sheep. While the Recovery Plan provides information regarding research, the purpose of this NEPA process is, more specifically, to evaluate the effect of permitting the use of public lands for research activities.

5. The Critical Habitat designation for Peninsular Ranges bighorn sheep has not been legally challenged and set aside; thus, the Critical Habitat designation published by the USFWS remains in effect. The effect of the Pygmy Owl case is unknown at this time.

6. Many researchers have found that human disturbance can alter habitat use and activity patterns of bighorn sheep (e.g., Van Dyke et al., 1983, Miller and Smith 1985, King and Workman 1986, Etchberger et al., 1989, Papouchis et al., 2000). Population declines (Van Dyke et al., 1983, Etchberger et al., 1989, Harris 1992), shifts in habitat use (Van Dyke et al., 1983), interupption of seasonal migration routes (Ough and deVos 1984), have been linked to human disturbance. Disturbance is often correlated with recreation use and urban interface issues. It is correct that population level impacts have not been illustrated. However, one research proposal considered under this Environmental Assessment would use GPS point data derived from collared bighorn sheep to create a viewshed model using GIS to assess the relationship between bighorn habitat use and trails in the Peninsular Ranges. This will give us a tool to evaluate recreation use and bighorn sheep habitat use, and whether there may be a link to population levels.

7. Please see response F.6. above. BLM's multiple use mandate requires us to manage for a variety of uses compatible with our responsibilities under the Federal Lands Policy and Management Act (FLPMA), the National Environmental Policy Act (NEPA), and the Endangered Species Act (ESA). It is not BLM's purpose to exclude human activity from all habitat.

8. The issues of disease, predation, and habitat protection are being addressed by on-going activities by the CDFG, BLM, USFWS, and independent researchers at the University of California - Davis. This programmatic EA will provide the basis for research permits to be issued.

9. The EA contains mitigation measures necessary to minimize impacts and provide protection for bighorn sheep.

10. Mortality of bighorn sheep on BLM-managed lands, to our knowledge, have all been from natural causes. The Bighorn Institute is a private, non-profit organization. Bighorn mortalities at the BI would be reportable to the USFWS not the BLM.

11. Permits issued by the BLM will have stipulations attached which require the researchers to submit annual progress reports and a final project report upon completion of the project.

12. Research proposals were reviewed by members of the Recovery Team prior to submission to the BLM for permit consideration. An interagency meeting was convened on August 1st , 2001 at the Carlsbad Office of the Fish and Wildlife Service attended by BLM, USFWS, CDFG to discuss and review research proposals. An additional meeting was held on August 2nd, 2001 with research proponents and BLM. USFWS, CDFG to discuss proposed and future research. BLM prepared the EA and accepted thorough review by USFWS with comments and extensive input incorporated. Research proponents were consulted by telephone and their input and information was included in the EA. The purpose of the EA is to evaluate the impact of issuing a permit to conduct research on public land, including both potential adverse effects and public benefits of the research. BLM must make a determination as to the validity of the research proposal as a land use in so far as it provides a clear public benefit and it avoids significant adverse impacts. The scientific merit of the research proposal is more within the purview of peer review through scientific journal publication.

13. Response same as number 12.

14. Response same as number 12.

15. Response same as number 12.

16. Response same as number 12.

17. The Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (USFWS 2000) describes specific research to support recovery of this population. The research described in the Recovery Plan is the basis for this programmatic EA. The Recovery Plan was published by the USFWS with the input of many knowledgeable bighorn sheep experts. The Recovery Plan was reviewed by technical and agency reviewers and comments were included and addressed in the final Recovery Plan.

18. Permits issued by the BLM will have stipulations attached which require the researchers to submit annual progress reports and a final project report upon completion of the project. Requests for data which are not in the public domain should be directed to the researchers.

19. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are incorporated by reference into the amended EA under *Bighorn Sheep Mitigation Measures.* Additional mitigation measures were

developed during the August 1-2, 2001 coordination meetings with the researchers and other agencies.

20. Many researchers have found that human disturbance can alter habitat use and activity patterns of bighorn sheep (e.g., Van Dyke et al., 1983, Miller and Smith 1985, King and Workman 1986, Etchberger et al., 1989, Papouchis et al., 2000). Population declines (Van Dyke et al., 1983, Etchberger et al., 1989, Harris 1992), shifts in habitat use (Van Dyke et al., 1983), interruption of seasonal migration routes (Ough and deVos 1984), have been linked to human disturbance. Disturbance is often correlated with recreation use and urban interface issues. It is important to note that population level impacts have not been illustrated. However, one research proposal considered under this Environmental Assessment would use GPS point data derived from collared bighorn sheep to create a viewshed model using GIS to assess the relationship between bighorn habitat use and trails in the Peninsular Ranges. This will give us a tool to evaluate recreation use and bighorn sheep habitat use. Caution is appropriate until stress hypotheses can be further evaluated.

21. There are many factors which have contributed to decline of bighorn populations in the Peninsular Ranges. Habitat fragmentation, disease, and predation are likely the leading causes. Population declines (Van Dyke et al., 1983, Etchberger et al., 1989, Harris 1992), shifts in habitat use (Van Dyke et al., 1983), interupption of seasonal migration routes (Ough and deVos 1984), have been linked to human disturbance. Disturbance is often correlated with recreation use and urban interface issues. It is important to note that population level impacts have not been illustrated. However, one research proposal considered under this Environmental Assessment would use GPS point data derived from collared bighorn sheep to create a viewshed model using GIS to assess the relationship between bighorn habitat use and trails in the Peninsular Ranges. This will give us a tool to evaluate recreation use and bighorn sheep habitat use. Habitat quality factors unrelated to human disturbance (e.g. effects of tamarisk on water availability) are also likely to be important.

Response to Letter G

1. Research proposals were reviewed by members of the Recovery Team prior to submission to the BLM for permit consideration. An interagency meeting was convened on August 1st , 2001 at the Carlsbad Office of the Fish and Wildlife Service attended by BLM, USFWS, CDFG to discuss and review research proposals. An additional meeting was held on August 2nd, 2001 with research proponents and BLM. USFWS, CDFG to discuss proposed and future research. BLM prepared the EA and accepted thorough review by USFWS with comments and extensive input incorporated. Research proponents were consulted by telephone and their input and information was included in EA. The purpose of

this environmental assessment is to evaluate the impact of the proposal and to discern the public benefit of the research. BLM must make a determination as to the validity of the research proposal in so far as it relates to the public benefit or adverse impact of issuing a permit to use public lands. The scientific merit of the research proposal is more in the purview of peer review through scientific journal publication.

2. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are incorporated by reference into the amended EA under *Bighorn Sheep Mitigation Measures.* Additional mitigation measures were developed during the August 1-2, 2001 coordination meetings with the researchers and other agencies.

3. Mitigation measure number 5 has been amended.

4. The purpose of this environmental assessment is to inform the public about proposed activities on BLM-managed lands, to evaluate the impact of the proposal and to discern the public benefit of the research. BLM must make a determination as to the validity of the research proposal in so far as it relates to the public benefit or adverse impact of issuing a permit to use public land for that purpose.

Response to Letter H

1. Upon close of the public review period on September 27, 2001, BLM put together an interdisciplinary team of staff specialists to review and respond to the 16 comment letters received. Through this process, BLM coordinated with the El Centro office, USFWS and CDFG to ensure a thorough response to the public comments.

2. The proposed actions and alternatives do not involve tribal land therefore a signature from the Tribal Chairman is not required. Consultation with the tribe was initiated August 28, 2001. Consultation with the State Historic Preservation Office is being conducted in accordance with the State Protocol Agreement (1998) between BLM and SHPO and 36 CFR Part 800. A Findings and Determination for Historic Properties concluded that the proposal is not the type of activity that has the potential to cause effects on historic properties.

3. Regulations and policies concerning research in wilderness using tools which are normally prohibited by Section 4(c) of the Wilderness Act are found at 43 CFR 6302.16, BLM Manual H-8560-1, and the policy annex Principles for Special Scientific, Recreational, and Commercial Uses within Wilderness Areas of the California Desert. Collectively, these regulations and policies restrict the *landing* of helicopters in wilderness to research that furthers the goals of protection of the

wilderness area, cannot be reasonably conducted outside of wilderness, and is the minimum tool necessary to carry out the proposed research activity. BLM must also ensure that such landings in the wilderness are rare and temporary.

The EA recognizes that, due to the relationship among wilderness boundaries, Peninsular Ranges bighorn sheep habitat and herd movements, greatly limiting the research methods in certain areas and not in others may compromise the validity and reliability of the results. Since one of the goals of this research is to answer questions relative to the interactions of recreational uses and bighorn sheep, both inside and outside of wilderness, the results of this research may have important ramifications for the proper long-term management of wilderness areas in Peninsular Ranges bighorn habitat and the subsequent protection of wilderness values. Therefore, the occasional and limited occurrence of helicopter landings in wilderness in pursuit of this research may result in improved protection of wilderness values through more informed management of wilderness uses such as hiking. The importance of maintaining the consistency of data collection methods to ensure the data will be as reliable and valid as possible will also result from allowing limited helicopter landings in wilderness.

The Minimum Requirement Analysis in the EA has been expanded to reflect explain why the use of helicopters to capture bighorn sheep is more appropriate than other methods not involving helicopters.

The intent of issuing interim research permits is to approve the research activities collectively and within the constraints of the approved action and mitigation measures. This would include all potential helicopter landings in wilderness, if approved. Individual landings would not need further approval under a permit, but prior notification of planned landings in wilderness would be required to improve BLM's effectiveness in communicating research activities to the public. A mitigation measure addressing this has been added to the EA.

4. The EA only addresses research activities on the BLM-managed public lands. The EA notes on page 9, section B2 that "it is incumbent upon the applicants to obtain landowner permission to conduct research on their lands. Issuances of a BLM permit does not authorize any activities other than those on BLM-managed public lands." A mitigation measures has been added to reiterate the importance of obtaining private landowner permission prior to conducting research activities on private land.

Response to Letter I

1. The EA has been amended to accurately reflect the capture and handling protocol described by the CDFG in their draft Bighorn Sheep Capture Plans. In that plan, submitted to the BLM on August 1, 2001, CDFG indicates that in the

Santa Rosa Mountains there will be three likely processing areas, the basin at Carrizo Canyon Ecological Reserve or at Magnesia Canyon Ecological Reserve, the flood control basin at La Quinta Cove, and the mouth of Martinez Canyon. Additionally, once sheep are netted, the mugger and/or net gunner will restrain the bighorn until a capture crew arrives to process the animal. The net gun crew may also process some animals or load animals for transport to a base camp for processing.

2. The EA correctly reflects the information provided to the BLM by the research proponent. The draft proposal Augmenting a Peninsular Bighorn Sheep Metapopulation in the San Jacinto Mountains, California, July 31, 2001 was submitted to the BLM on August 2, 2001.

3. The EA has been amended to reflect the clarification requested. Population surveys are conducted by helicopter every other year. Fixed-wing flights are conducted as necessary to locate collared sheep; however, these flights occur at an altitude of >1500 feet above the ground and do not cause disturbance to bighorn sheep.

4. GPS collars are downloaded remotely either from the ground or from an aircraft. From the ground, a direct line between the collar and the researcher with computer is required. Sheep are not recaptured for downloading GPS collars and VHF collars emit a constant signal until the battery is dead, usually several years, and as such are not downloaded at all.

5. The EA states that "intensive monitoring could result in interrupted suckling bouts thus resulting in reduced fitness." The purpose of the EA is to describe possible impacts on the public lands. Although researchers studying lamb mortality here have not reported interrupted suckling bouts it is a possible impact and thus must be addressed in this environmental assessment.

6. Permits issued under this programmatic EA would be interim pending completion of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). Impacts to bighorn sheep from research, trail use, OHV, and other uses will be assessed in the CVMSHCP. In addition, some of the data collected will be used to evaluate bighorn sheep habitat use and selection relative to the location of trails.

7. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are incorporated by reference into the amended EA under *Bighorn Sheep Mitigation Measures.* Additional mitigation measures were developed during the August 1-2, 2001 coordination meetings with the researchers and other agencies.

Response to Letter J

1. Lamb captures would occur in the spring of 2002 and a maximum of 10 lambs would be captured. All of the ewes in the northern Santa Rosa Mountains are collared, thus making location of newborn lambs relatively easy. A helicopter may be used to take researchers and capture personnel to the area where lambs are but captures would occur on the ground using hand-held net guns or hand capture. There are several examples in the primary scientific, peer-reviewed literature which indicates that the ewe-lamb bond is not disrupted by capturing lambs (Hass 1989, 1991) or during spring ewe captures (L'Heureux et al., 1995).

2. Lamb captures would occur in the spring of 2002 and a maximum of 10 lambs would be captured. All of the ewes in the northern Santa Rosa Mountains are collared, thus making location of newborn lambs relatively easy. A helicopter may be used to take researchers and capture personnel to the area where lambs are but captures would occur on the ground using hand-held net guns or hand capture. There are several examples in the primary scientific, peer-reviewed literature which indicates that the ewe-lamb bond is not disrupted by capturing lambs (Hass 1989, 1991) or during spring ewe captures (L'Heureux et al., 1995).

3. Field monitoring and coordination among sheep biologists has permitted BLM to periodically view Bighorn Institute operations.

Response to Letter K

1. Experience and research have demonstrated that capturing bighorn sheep using a helicopter is one of the most efficient and least stressful to bighorn sheep (Kock et al., 1987, Jessup et al., 1988). Optional methods of capture include chemical immobilization (darting and drugging) which is often conducted via helicopter; baiting and trapping sheep, which in the rough terrain of the Peninsular Ranges would likely be ineffective; and capturing using a net gun from the ground, which again, in the rough terrain of the Peninsular Ranges would likely prove ineffective. Although the risk of injury and mortality during capture exists, few serious injuries or mortalities occur during sheep captures. The vast majority of bighorn sheep captures occur with no capture-related mortality. Most individual chase times during California Department of Fish and Game captures are less than 3 minutes. The Recovery Plan states that "pursuit of a running animal should not exceed 5 minutes". Mitigation Measure No. 6 reflects this.

2. Lamb mortality is a natural occurrence. The purposes of the research is to better understand the natural causes of mortality. In addition, the researchers have a section 10a(1)a permit from the USFWS which allows them to capture and study lambs. No individual is allowed to capture and study endangered species

without a permit from the USFWS. The purpose of the BLM permit is to assess and mitigate the impacts of research on the BLM land and resources.

3. Regulations and policies concerning research in wilderness using tools which are normally prohibited by Section 4(c) of the Wilderness Act are found at 43 CFR 6302.16, BLM Manual H-8560-1, and the policy annex Principles for Special Scientific, Recreational, and Commercial Uses within Wilderness Areas of the California Desert. Collectively, these regulations and policies restrict the *landing* of helicopters in wilderness to research that furthers the goals of protection of the wilderness area, cannot be reasonably conducted outside of wilderness, and is the minimum tool necessary to carry out the proposed research activity. BLM must also ensure that such landings in the wilderness are rare and temporary.

   The EA recognizes that due to the relationship among wilderness boundaries, Peninsular Ranges bighorn sheep habitat and herd movements, greatly limiting the research methods in certain areas and not in others may compromise the validity and reliability of the results. Since one of the goals of this research is to answer questions relative to the interactions of recreational uses and bighorn sheep, both inside and outside of wilderness, the results of this research may have important ramifications for the proper long-term management of wilderness areas in Peninsular Ranges bighorn habitat and the subsequent protection of wilderness values. Therefore, the occasional and limited occurrence of helicopter landings in wilderness in pursuit of this research may result in improved protection of wilderness values through more informed management of wilderness uses such as hiking and special values such as bighorn sheep habitat. The importance of maintaining the consistency of data collection methods to ensure the data will be as reliable and valid as possible will also result from allowing limited helicopter landings in wilderness.

   The Minimum Requirement Analysis in the EA has been expanded to reflect explain why the use of helicopters to capture bighorn sheep is more appropriate than other methods not involving helicopters.

   The intent of issuing interim research permits is to approve the research activities collectively and within the constraints of the approved action and mitigation measures. This would include all potential helicopter landings in wilderness, if approved. Individual landings would not need further approval under a permit, but prior notification of planned landings in wilderness would be required to improve BLM's effectiveness in communicating research activities to the public. A mitigation measure addressing this has been added to the EA

4. Permits issued under this programmatic EA would be interim pending completion of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). Impacts to bighorn sheep from research, trail use, OHV, and other

uses will be assessed in the CVMSHCP. In addition, some of the data collected will be used to evaluate bighorn sheep habitat use and selection relative to the location of trails.

5. Researchers must have a section 10a(1)a permit from the USFWS which allows them to capture and study lambs. No individual is allowed to capture and study endangered species without a permit from the USFWS.

Response to Letter L

1. Experience and research have demonstrated that capturing bighorn sheep using a helicopter is one of the most efficient and least stressful to bighorn sheep (Kock et al., 1987, Jessup et al., 1988). Optional methods of capture include chemical immobilization (darting and drugging) which is often conducted via helicopter; baiting and trapping sheep, which in the rough terrain of the Peninsular Ranges would likely be ineffective; and capturing using a net gun from the ground, which again, in the rough terrain of the Peninsular Ranges would likely prove ineffective. Although the risk of injury and mortality during capture exists, few serious injuries or mortalities occur during sheep captures. The vast majority of bighorn sheep captures occur with no capture-related mortality. Most individual chase times during California Department of Fish and Game captures are less than 3 minutes. The Recovery Plan states that "pursuit of a running animal should not exceed 5 minutes". Mitigation Measure No. 6 reflects this.

Response to Letter M

1. The EA only addresses research activities on the BLM-managed public lands. The EA notes on page 9, section B2 that "it is incumbent upon the applicants to obtain landowner permission to conduct research on their lands. Issuances of a BLM permit does not authorize any activities other than those on BLM-managed public lands." A mitigation measures has been added to reiterate the importance of obtaining private landowner permission prior to conducting research activities on private land.

Response to Letter N

1. The *Cumulative Impacts* section of the EA has been amended.

Response to Letter O

1. Experience and research have demonstrated that capturing bighorn sheep using a helicopter is one of the most efficient and least stressful to bighorn sheep (Kock et al., 1987, Jessup et al., 1988). Optional methods of capture include chemical immobilization (darting and drugging) which is often conducted via helicopter; baiting and trapping sheep, which in the rough terrain of the Peninsular Ranges would likely be ineffective; and capturing using a net gun from the ground, which again, in the rough terrain of the Peninsular Ranges would likely prove ineffective. Although the risk of injury and mortality during capture exists, few serious injuries or mortalities occur during sheep captures. The vast majority of bighorn sheep captures occur with no capture-related mortality. Stipulations described in the Section 10(a)1(a) permit issued to the researchers by the USFWS are a condition of BLM's approval and are incorporated as an attachment into the amended EA and decision record. Some of the information gathered by this research may be beneficial to trail users, identifying opportunities for more flexibility in trail use.

Response to Letter P

1. The California Department of Fish and Game has recently begun implementing a predator control program in the Peninsular Ranges. This action, combined with other management actions, will help ensure the persistence of this population of bighorn sheep.